Chapter 2

Purpose and Need

2. PURPOSE AND NEED

Chapter 2 discusses the reasons the U.S. Department of Energy is proposing to relocate the TA-18 capabilities and materials and the proposed objectives.

Nuclear materials management is a fundamental responsibility of the U.S. Department of Energy (DOE), as its operations routinely involve the use of nuclear materials. The nuclear criticality safety, research, and training at TA-18 play a key role in ensuring that DOE handles nuclear materials in a safe manner.

The National Nuclear Security Administration is responsible for a number of activities involving the use of nuclear materials and maintaining the Nation's nuclear weapons program. Activities associated with this mission include handling and processing fissile materials for use in nuclear weapons and storage of special nuclear material. DOE's Emergency Response Program directly supports weapons-of-mass-destruction initiatives stemming from Executive Order 12938 and Presidential Decision Directives 39 and 62. This program is responsible for developing detection and diagnostic equipment to protect the United States against terrorist devices of unknown design and origin. Additionally, DOE's Nuclear Nonproliferation Program is responsible for developing nuclear measurement methods to verify treaty agreements with foreign nations, protect the United States against nuclear smuggling activities, and support domestic and international safeguards.

In other areas of DOE, the Environmental Management Program is responsible for cleaning up former weapons complex facilities that house surplus fissile materials in various storage arrays. The Civilian Radioactive Waste Management Program is responsible for identifying a long-term repository for high-level radioactive waste from commercial power plants. In both cases, specific information is needed on nuclear materials to determine safe storage configurations to prevent criticality events.

To carry out these missions in a safe manner, DOE needs to maintain the capability to conduct general-purpose criticality experiments and detector development with various types and configurations of special nuclear material. Additionally, DOE needs to maintain the capability to train its Federal and contractor employees to handle nuclear materials in a manner that will prevent inadvertent criticality. In 1993 and again in 1997, the Defense Nuclear Facilities Safety Board recommended that DOE continue to maintain the capability to support the TA-18 criticality experiments program (DNFSB 1993, DNFSB 1997).

Currently, the criticality experiments activities are conducted at a collection of facilities located at TA-18 in Los Alamos, New Mexico. TA-18 at the Los Alamos National Laboratory is the only DOE facility where criticality experiments are performed routinely. This collection of facilities is near the end of its useful life, and action is required by DOE to assess alternatives for continuing these activities for the next 25 years.

This environmental impact statement identifies siting options to assist DOE in determining a long-term strategy for maintaining nuclear criticality missions, infrastructure, and expertise presently residing at TA-18.